

USSN 09/896,955

REMARKSFees for this response

The total number of claims in the case after this amendment is 18, of which 3 are in independent form. No fee is believed to be required with this response.

General remarks regarding the amendments

The case now contains three independent claims—1, 4 and 13.

Claim 1 has been amended from the original by further defining the Lewis base catalyst as a mono-, di- or trialkyl amine. Support for the additional limitations in claim 1 is found at page 4 lines 16-20 of the specification.

Claim 2 has been amended to correct typographical errors.

Claim 4 has been rewritten in independent form. It is identical in scope to original claim 4, which the examiner has indicated as being substantively allowable.

Claim 13 has been added. It corresponds in scope to original claim 1, with the addition requirement that the silicone precursor is added simultaneously with water and the ammonia or Lewis base catalyst. Support for new claim 13 is found in original claim 1 and at page 5 lines 8-17 of the specification.

Claims 14-18 have been added, and depend from new claim 13. Support for new claim 14 is found in original claim 2. Support for new claim 15 is found in original claim 3. Support for new claim 16 is found in original claims 5-6. Support for new claim 17 is found in original claim 8. Support for new claim 18 is found at page 4 lines 16-20 of the specification.

Regarding the double patenting rejections

Claims 1-3 and 10-12 stand rejected for obviousness-type double patenting over claims 37 and 38 of U. S. Patent No. 6,090,442 and/or 6,090,442 in view of the Klaus et al article in *Science*. This rejection is respectfully traversed for the following reasons.

Claims 1-3 and 10-12 all now require that the reaction be performed in the presence of ammonia or a mono-, di- or trialkyl amine.

Claims 37 and 38 of US 6,090,442 describe a process in which  $\text{SiCl}_4$  is reacted with water or hydrogen peroxide in the presence of pyridine ( $\text{C}_5\text{H}_5\text{N}$ ). Pyridine is an aromatic, cyclic compound in which the nitrogen atom is not substituted with alkyl groups of any

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kind. Pyridine is neither ammonia, nor a primary, secondary or tertiary amine. Therefore, claims 1-3 and 10-12 define subject matter that is distinct from that described in claims 37 and 38 of US 6,090,442. There is no suggestion in claims 37 or 38 of US 6,090,442 to substitute ammonia or an alkyl amine for the single catalytic species, pyridine, defined in those claims.

Regarding the rejection of claims 1-3 and 10-12 over the *Science* article

The rejection of these claims as being anticipated by the *Science* article is traversed. Claim 1 as amended requires that the reaction be conducted in the presence of ammonia or certain alkyl amines. The disclosure of the *Science* article (like that of US 6,090,442) is limited to reactions conducted in the presence of pyridine. Because the *Science* article does not describe every feature of claim 1, neither it nor any claims depending from it are anticipated.

As to new claim 13, this claim requires that the silicon precursor material be added simultaneously with water and either ammonia or the Lewis base catalyst. The process in the *Science* article is different in that water and the silicon precursor are added separately, in alternating sequence. In the *Science* article, the water and silicon precursor additions are separated by a step in which the reaction chamber is evacuated to remove residual reactants that do not react at the substrate surface. See especially the third, fourth, sixth, seventh and eight paragraphs on page 1934, particularly the seventh paragraph.

Regarding the rejection of claims 1-3 and 10 over US 6,090,442

US 6,090,442 does not anticipate claim 1 of this application, as amended, because the disclosure of US 6,090,442 is limited to the use of pyridine as a catalyst for the reaction of  $\text{SiCl}_4$  and water or hydrogen peroxide. As mentioned above, pyridine is neither ammonia nor a mono-, di- or trialkylamine.

As to new claim 13, US 6,090,442 does not describe the simultaneous introduction of the silicon precursor with water and ammonia or Lewis base catalyst.

Regarding the rejection of claims 11 and 12 over the *Science* article

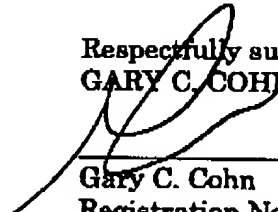
These claims are patentable over *Science* article for the same reasons as are claims 1-3 and 10-12.

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Conclusion

All claims now pending in this application have been shown to be novel and unobvious over the cited references. A timely notice of allowance is respectfully requested. The undersigned is available by telephone if a call would advance prosecution.

Respectfully submitted,  
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